

State of Colorado
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:
403963653
Receive Date:
11/14/2024
Report taken by:
Steven Arauza

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by ECMC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27.

This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: CAERUS PICEANCE LLC	Operator No: 10456	Phone Numbers
Address: 1001 17TH STREET #1600		Phone: (970) 640-6919
City: DENVER State: CO Zip: 80202		Mobile: (970) 640-6919
Contact Person: Blair Rollins	Email: brollins@qb-energy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29668 Initial Form 27 Document #: 403415823

PURPOSE INFORMATION

- Rule 913.c.(1): Pit or Cuttings Trench closure.
- Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- Rule 913.g: Changes of Operator.
- Rule 915.b: Request to leave elevated inorganics in situ.
- Other: _____

SITE INFORMATION

Yes Multiple Facilities

Facility Type: WELL	Facility ID: _____	API #: 103-10955	County Name: RIO BLANCO
Facility Name: FEDERAL 1S-95-20-23 CP	Latitude: 39.951965	Longitude: -108.079929	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 20	Twp: 1S	Range: 95W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION	Facility ID: 316602	API #: _____	County Name: RIO BLANCO
Facility Name: FEDERAL-61S95W 20NESW	Latitude: 39.951965	Longitude: -108.079929	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 20	Twp: 1S	Range: 95W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications OH

Most Sensitive Adjacent Land Use Rangeland

Is domestic water well within 1/4 mile? No

Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input checked="" type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | |
| <input type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | |

No impacts associated with this project have been identified.

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	To be Determined	Field investigation and soil sampling

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

Please see ECMC Documents 403415823, 403511488, and 403657248 for a list of activities completed prior to the third quarter of 2024.

On July 9, 2024, one (1) produced fluid sample [20240709-XTSOURCE-(FED 15-96-23-12-T)] was collected from a tank on the Federal 1S-96-23-12 Pad. The Federal 1S-86-23-12 well produces from the same formation as the Federal 1S-95-20-23 CP.

On August 28, 2024, three (3) soil samples [20240828-1S-95-20-23-(SB01)@15], [20240828-1S-95-20-23-(SB01)@20], and [20240828-1S-95-20-23-(SB01)@25] were collected from a soil boring adjacent to the wellhead for vertical delineation. These samples were analyzed for TPH and pH only as approved in document #403657248.

On August 29 and August 30, 2024, a twelve (12) total soil samples [20240829-1S-95-20-23-(SB02)@10], [20240829-1S-95-20-23-(SB02)@15], [20240829-1S-95-20-23-(SB02)@20], [20240829-1S-95-20-23-(SB02)@25], [20240829-1S-95-20-23-(SB03)@10], [20240830-1S-95-20-23-(SB03)@15], [20240830-1S-95-20-23-(SB03)@20], [20240830-1S-95-20-23-(SB03)@25], [20240830-1S-95-20-23-(SB04)@10], [20240830-1S-95-20-23-(SB04)@15], [20240830-1S-95-20-23-(SB04)@20], and [20240830-1S-95-20-23-(SB04)@25] were collected from 3 soil borings adjacent to the removed partially buried tank for vertical and horizontal delineation. These samples were analyzed for TPH only as approved in document #403657248.

Excluding pH, the analytical results for soil samples collected between August 28 and 30, 2024 did not exceed ECMC Table 915-1 within the wellhead and partially buried tank investigation areas. pH was detected at concentrations above ECMC Table 915-1 in the three samples collected adjacent to the wellhead ([20240828-1S-95-20-23-(SB01)@15], [20240828-1S-95-20-23-(SB01)@20], and [20240828-1S-95-20-23-(SB01)@25]).

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Additional soil borings will be advanced south and west of the former partially buried tank to complete horizontal delineation of impacts. The soil samples will be analyzed for TPH only as approved in document #403657248. Additional soil borings will be advanced north, south, east, and west of the wellhead to complete horizontal delineation of impacts. The soil samples will be analyzed for TPH and pH only as approved in document #403657248. Please see Figures 8 and 9 in the attached Site Investigation Report.

Proposed Groundwater Sampling

Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Proposed Surface Water Sampling

Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan (summary):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 48

Number of soil samples exceeding 915-1 48

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 500

NA / ND

-- Highest concentration of TPH (mg/kg) 2301.12

-- Highest concentration of SAR 3.63

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 5

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) _____

Number of groundwater monitoring wells installed _____

Number of groundwater samples exceeding 915-1 _____

_____ Highest concentration of Benzene (µg/l) _____

_____ Highest concentration of Toluene (µg/l) _____

_____ Highest concentration of Ethylbenzene (µg/l) _____

_____ Highest concentration of Xylene (µg/l) _____

_____ Highest concentration of Methane (mg/l) _____

Surface Water

0 Number of surface water samples collected

 Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

OTHER INVESTIGATION INFORMATION

Were impacts to adjacent property or offsite impacts identified?

Were background samples collected as part of this site investigation?

Eight background samples were collected from eight offsite and undisturbed locations north, east, south, and west of the facility.

Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) _____

Volume of liquid waste (barrels) _____

Is further site investigation required?

See the Proposed Sampling Plan section of this form for details on future sampling.

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The sources for the TPH exceedances were from the wellhead and partially buried tank, both of which have been removed.

REMEDICATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

To address the outstanding pH and arsenic exceedances in the facility closure samples collected between June 22 and November 16, 2023, Caerus requests consideration of Rule 915.e.(2).C. to remove pH and arsenic as a constituent of concern in the site assessment soil samples. A sample of produced fluid a tank on the Federal 1-96-23-12 Pad was utilized for comparison of pH and arsenic concentrations of the fluid sourcing from the same formation as the Federal 1S-95-20-23 CP well (Figure 5, Table 2, and Appendix B). The produced fluid obtained from the facility exhibited pH and arsenic concentrations lower than the site assessment soil samples. Caerus believes that a release of fluids from this formation would not lead to elevated pH and arsenic concentrations observed in the facility closure soil samples collected between June 22 and November 16, 2023. Caerus intends to continue delineation of TPH and pH at the former wellhead and TPH at the former partially buried tank under the approved reduced analyte suite.

Soil Remediation Summary

In Situ

Ex Situ

- _____ Bioremediation (or enhanced bioremediation)
- _____ Chemical oxidation
- _____ Air sparge / Soil vapor extraction
- _____ Natural Attenuation
- _____ Other _____

- _____ Excavate and offsite disposal
- _____ If Yes: Estimated Volume (Cubic Yards) _____
- _____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
- _____ Excavate and onsite remediation
- _____ Land Treatment
- _____ Bioremediation (or enhanced bioremediation)
- _____ Chemical oxidation
- _____ Other _____

Groundwater Remediation Summary

- _____ Bioremediation (or enhanced bioremediation)
- _____ Chemical oxidation
- _____ Air sparge / Soil vapor extraction
- _____ Natural Attenuation
- _____ Other _____

GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

Quarterly Semi-Annually Annually Other

Request Alternative Reporting Schedule:

Semi-Annually Annually Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

Report Type: Groundwater Monitoring Land Treatment Progress Report O&M Report
 Other Q2, Q3, and Q4 2024 REM Status Update

Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).
If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Per Rule 705.b, and in line with guidance laid out in the SBAP, Caerus has general liability insurance in the amount of \$1M, and Caerus has umbrella insurance, which sits over the general liability insurance in the amount of \$75M. The umbrella and general liability insurance covers property damage, bodily injury to third parties, and sudden or accidental pollution under a combined \$76M.

Operator anticipates the remaining cost for this project to be: \$ 350000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards 0

E&P waste (solid) description _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels 15

E&P waste (liquid) description potentially impacted soil mixed with hydrovac rinsate

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Greenleaf Environmental Services

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

If YES:

- Compliant with Rule 913.h.(1).
- Compliant with Rule 913.h.(2).
- Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the ECMC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

RECLAMATION PLAN

RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

Plans for reclamation will be presented in a future Form 27.

Is the described reclamation complete? _____

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

Interim

Final

Did the Surface Owner provide the seed mix? _____

If YES, does the seed mix comply with local soil conservation district recommendations? _____

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. _____

Proposed date of completion of Reclamation. _____

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/01/2023

Proposed site investigation commencement. 07/01/2023

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. _____

Proposed date of completion of Remediation. _____

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

--

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Blair Rollins _____

Title: Environmental Specialist _____

Submit Date: 11/14/2024 _____

Email: brollins@qb-energy.com _____

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECOMC Rules and applicable orders and is hereby approved.

ECMC Approved: Steven Arauza _____

Date: 01/21/2025 _____

Remediation Project Number: 29668 _____

COA Type**Description**

0 COA	

ATTACHMENT LIST

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num**Name**

403963653	FORM 27-SUPPLEMENTAL-SUBMITTED
403977905	ANALYTICAL RESULTS
403977909	ANALYTICAL RESULTS
403977910	ANALYTICAL RESULTS
403977920	ANALYTICAL RESULTS
403977941	SITE INVESTIGATION REPORT

Total Attach: 6 Files

General Comments**User Group****Comment****Comment Date**

Environmental	Comply with outstanding COAs.	01/21/2025
---------------	-------------------------------	------------

Total: 1 comment(s)